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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/064,612

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Tom-Chin Chang

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11/15/2005

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EXAMINER

SETH, MANAV

ART UNIT

PAPER NUMBER

2625

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/064,612

Applicant(s)

CHANG, TOM-CHIN

Examiner

Manav Seth

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to the Amendment

1. Amendment filed on September 26, 2005 has been entered in full.
2. Applicant's amendments to the specification have been fully entered and are persuasive; therefore, objections on specification have been withdrawn.
3. Applicant's arguments to the claims have been fully considered but are moot in view of the rejections made below.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 12 recites "extracting only a plurality of last bits" and "extracting only a plurality of first bits". It is unclear from the claims, what constitutes "plurality of last bits" and "plurality of first bits". These limitations in the respective claims can be interpreted such as anything except for first bit being "plurality of last bits" and anything except for last bit being "plurality of

first bits". The resulting claims does not clearly set forth the metes and bounds of the patent protection desired, thus making the claims 1 and 12 vague and indefinite.

The specification in paragraph 0026 and 0027 recites the support "such as last 8 bits" and "such as first 8 bits" but does not set forth the metes and bounds of the total number of bits. Further emphasizing the situation when the total number of bits are 8, and as per the specification, if the last 8 bits were extracted, the last 8 bits would be all 8 bits, and, if the first 8 bits were extracted, first 8 bits would be all 8 bits, thus making the claims 1 and 12 vague and indefinite.

The resulting claims does not clearly set forth the metes and bounds of the patent protection desired, thus making the claims 1 and 12 vague and indefinite.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizuka, U.S. Patent No. 5,262,873.

Claim 1 recites "An image correction method able to avoid error images, comprising: obtaining a first correction digital signal by scanning a first correction document during black correction, and extracting only a plurality of last bits of the first correction digital signal; and

obtaining a second correction digital signal by scanning a second correction document during white correction, and extracting only a plurality of first bits of the second correction digital signal". Ishizuka, as a prior art, starts with teachings of a correcting device in which a white correction digital signal is obtained by reflecting a light from light source by a white reference (e.g. document) provided in the scanner (col. 3, lines 65-68 through col. 4, lines 1-3). Ishizuka further discloses **"Since the scanner is generally characterized by the white signals** between adjacent pixels or within a range of a small number of pixels being similar to each other, the difference between the adjacent pixels is, for example, between 1 and several tens of percentage points of the full scale. Therefore, the value representing the difference is small with respect to the number of bits of the output of the A/D converter 101, and the number of bits required for the memory 103 can thus be reduced, saving the capacity of the memory 103" (col. 4, lines 43-52). Ishizuka further discloses **"The output of the A/D converter 101 other than one to a few bits of the minimum resolution (LSB) side of the output of the A/D converter 101 is input to the subtracter 105, and the result of the subtraction is stored in the memory 103"** (col. 5, lines 22-30) where the other bits other than LSB (a plurality of last bits) are **MSB (or a plurality of first bits)**. From the above disclosure by Ishizuka it is clear that after white digital correction signal is obtained, the number of bits representing the white digital correction signal are reduced with respect to the small memory size and only a plurality of first bits (MSBs) of white correction digital signal are extracted.

Ishizuka further teaches a correcting device which obtains a dark (black) correction digital signal for each of the bits of the scanner by reading a black reference (document) or by turning off a light source and then by performing reading by the scanner under the darkest condition (col. 6, lines 56-61). Ishizuka further teaches "since the dark signal has a number of bits smaller than that

of the effective signal, the number of bits of the quantized value of the dark signal is less than N. Since a value having a number of bits smaller than N is stored in the memory, the capacity of the memory can be saved (col. 7, lines 53-58). Ishizuka does not explicitly or specifically teach extracting the plurality of last bits of the black correction signal but does teach using fewer bits of the black correction signal, thus using the reduced memory size.

As discussed before, Ishizuka clearly teaches the white correction process by disclosing **“Since the scanner is generally characterized by the white signals** between adjacent pixels or within a range of a small number of pixels being similar to each other, the difference between the adjacent pixels is, for example, between 1 and several tens of percentage points of the full scale. Therefore, the value representing the difference is small with respect to the number of bits of the output of the A/D converter 101, and the number of bits required for the memory 103 can thus be reduced, saving the capacity of the memory 103” (col. 4, lines 43-52) and further discloses extracting plurality of first bits (MSB) to represent the white correction value and thus leaving behind LSB of minimum resolution (or contrast) **(col. 5, lines 22-26). Similarly**, Ishizuka performs black correction and apparently black being very small in value, all the pixels can be represented by the smaller number of bits. Further emphasizing, it is a well-known technical fact, that black occupies one end and white occupies another end of the grayscale range. Therefore, it would have been obvious for one of ordinary skill in the art at the time of invention was made in view of this well-known technical fact such that if MSB or plurality of first bits of white correction signals are selected for white image correction, as done by Ishizuka, LSB or plurality of last bits of black correction will be selected for black image correction, as black occupies one end and white occupies another end of the grayscale contrast range and Ishizuka does teach **the scanner (or**

image extracting device) is generally characterized by the white signals as discussed before, whereas black correction is done when there is no light source or using black reference, thus the black correction signal being too small, and further white correction extracts high resolution MSB side bits leaving behind low resolution LSB bits and since black correction represents very small value, the selection of bits from the LSB minimum resolution side is obvious.

Ishizuka further discloses that in order to reduce memory size, a common memory is used by both a white signal correcting device and a dark (black) signal correcting device, and these two correcting devices are formed as one unit and figure 9 shows that one unit (col. 8, lines 35-44). Ishizuka further discloses the method performed by this single unit where, (a) **first**, a black correction digital signal is obtained (col. 8, lines 45-47) and the black correction digital signal (a plurality of bits) is stored in the four leftmost bits of the flip-flop 303 (col. 8, lines 55-57), and (b) **second**, a white correction digital signal is obtained (col. 8, lines 58-60) and the white correction digital signal (a plurality of bits) is stored in the four rightmost bits of the flip-flop 303 (col. 8, lines 63-66).

Claim 2 recites "the method according to claim 1, the extracted last bits of the first correction digital signal are stored in a memory". As discussed in the rejection of claim 1, the extracted bits of the both dark and white correction digital signals are stored in memory. Therefore, Claim 2 has been similarly analyzed and rejected as per claim 1.

Claim 3 recites "the method according to claim 2, wherein the memory includes a random access memory". As from the definition, RAM or random access memory is a memory that can be

written and read. Memory, 303, has been discussed in the rejection of claim 1. Therefore, claim 3 has been similarly analyzed and rejected as per claims 2 and 1.

Claim 4 has been similarly analyzed and rejected as per claims 1-3.

Claim 5 has been similarly analyzed and rejected as per claims 4 and 1-3.

Claim 6 has been similarly analyzed and rejected as per claim 1.

Claim 7 has been similarly analyzed and rejected as per claim 1.

Claim 8 has been similarly analyzed and rejected as per claim 1.

Claim 9 recites "the method according to claim 8, wherein the image extraction device includes a charge-coupled device". Ishizuka discloses a image sensor, 53, as an image extraction device in figure 9 and CCDs (charge-coupled devices) are well known to be used as image sensing or extracting devices in devices such as scanners, cameras, copiers, etc.

Claim 10 has been similarly analyzed and rejected as per claims 8 and 1.

Claim 11 has been similarly analyzed and rejected as per claims 10, 9, 8 and 1.

Claims 12-22 have been similarly analyzed and rejected as per claims 1-11.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Nagashima, U.S. Patent No. 4,814,877, discloses an image reading apparatus provided with correction for shadings in image data.
- Tamura, U.S. Patent No. 5,943,141, discloses an image reading apparatus having shading correction means using a reference data processing circuit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manav Seth whose telephone number is (571) 272-7456. The examiner can normally be reached on Monday to Friday from 8:30 am to 5:00 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system,

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see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Manav Seth
Art Unit 2625
November 09, 2005


KANJIBHAI PATEL
PRIMARY EXAMINER